this Amendment a document entitled "Marked-Up Claim Amendments". A clean copy of the claims is also enclosed. Claim amendments and new claim are described in this document.

REMARKS

The foregoing amendment is presented to expedite prosecution and to place the application in condition for allowance.

Claims 1-6 and 10-15 are pending in this application. Claims 1-6 have been amended to more clearly define the claimed invention. In particular, claims 3-6 have been amended to avoid defining Applicants' invention by multi-dependent claims. Claims 10-15 are new claims. There is no new matter presented in these amendments. Neither is there any new matter in the new claims.

In the Outstanding Office Action, claims 1-2 and 8-9 were rejected under 102(b) based on the Cundiff (U.S.Patent No. 5,567,499).

Claims 3-7 were rejected under 103(a) based on the Cundiff in view of Fellman (U.S.Patent No. 4,968,545), Ahrens (U.S.Patent No. 4,323,623) and Browne(U.S.Patent No. 4,861,649), optionally further taken with Narita (U.S.Patent No. 5,431,995).

Furthermore, claims 8 and 9 were rejected under 112, second paragraph,

as being indefinite. The Examiner suggested that one of claims 8 and 9 should be canceled. In this amendment, Applicant has canceled claims 8-9. For this reason, this rejection is moot.

Applicant respectfully traverses these rejections of claims 1 to 6 and request reconsideration for claims 1-6 as well as claims 10-13 based on reasons discussed herein.

Applicants' invention recited in claim 1 relates to a honeycomb sandwich composite panel by using an RTM (Resin Transfer Molding) process. The panel is formed by placing dry fabric on both sides of the honeycomb core with a thermosetting sealing material having an adhesive property provided between the honeycomb core and the dry fabric. The sealing material used according to the invention has in addition to the adhesive property a sufficient sealing effect to prevent the resin from flowing into the honeycomb core during resin impregnation and for joining the honeycomb core to the dry fabric. Specific structures are shown in the specification in page 7, line 3-25 and Figures 3 to 6.

In contrast to Applicants' invention recited in claim 1, Cundiff discloses making the honeycomb sandwich composite panel by using an RTM (Resin Transfer Molding) process with the honeycomb core, adhesive film and prepreg material and dry fabric.

With respect to the sealing material, Cundiff uses the prepreg and

adhesive film to seal the honeycomb core and the dry fabric. There is no disclosure, suggestion or teaching in Cundiff of using a thermosetting sealing material to seal the core member and the dry fabric. Furthermore, there is no disclosure, suggestion or teaching in Cundiff of a thermosetting sealing material having a sufficient sealing effect to prevent the resin from flowing into the honeycomb core. Accordingly, Applicants' invention recited in claim 1 is patentably distinct from Cundiff at the points of using the thermosetting sealing material and the effect obtained by using this thermosetting sealing material. For these reasons, Applicants believe that claim 1 is patentable over Cundiff, and respectfully request reconsideration of this application.

Regarding claim 2, this claim has been amended to define the feature of sealing material as in claim 1. For the same reason as claim 1, Applicants believe that claim 2 is patentable over the Cundiff.

Regarding claims 3-6, these claims have been amended to depend from claim 1. Furthermore, Applicants have amended these claims to define Applicants' invention even more clearly. These claims define the sealing material in detail.

The Examiner has cited several references (Fellman et al., Ahrens et al. and Browne, optionally further taken with Narita et al) to modify Cundiff.

The cited references disclose sealing layers of syntactic foam and

prepreg, however, Applicants' invention does not use a prepreg. For this reason, it is clear that the technical theory for forming the honeycomb sandwich composite panel is different between Applicants' invention and cited references.

Furthermore, the cited references do not disclose the thermosetting sealing material having a sufficient sealing effect to prevent the resin from flowing into the honeycomb core during resin impregnation. For this reason, even if Cundiff is modified in view of Fellman et al., there is no suggestion or teaching about the feature of Applicants' invention which is to use thermosetting sealing material for sealing the core member and the dry fabric, where the thermosetting sealing material having a sufficient sealing effect to prevent the resin from flowing into the honeycomb core.

With respect to microbaloons (microspheres), the cited references use them for stiffening the product, however, there is no disclosure about using them to adjust the viscosity of thermosetting sealing material. For these reasons, Applicants believe that claims 3-6 are patentable over the cited references. It should be noted that the term "microbaloons" has been replaced by the term "microspheres" as is obviously meant by the original term when translated from the Japanese language.

Regarding claims 10-13, these claims depend from claim 2 and correspond to claims 3-6. For the same reason as in claims 3-6, Applicants believe

that claims 10-13 are patentable over the cited references.

Regarding claims 14-15, these claims are dependent claims which depend from claim 1 or 2, and define that short fibers or non-woven fabric of glass instead of the glass microspheres. For the same reason as claims 1 and 2, and furthermore because this feature is not disclosed in cited references, Applicants believe that claims 14-15 are in condition for allowance.

In view of the above, Applicants request that the rejection be withdrawn and the claims be allowed at the Examiner's earliest convenience.

Respectfully submitted,

SMITH, GAMBRELL & RUSSELL, LLP

By: _____

Robert G. Weilacher
Reg. No. 20531
1850 M Street, N.W., Suite 800
Washington, D.C. 20036

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Marked Up Version of claims

1. (first amendment) A method of forming a honeycomb sandwich composite panel comprising the steps of:

stacking a dry fabric on both sides of a honeycomb core with a thermosetting sealing material having an adhesive property placed in between;

heating said sealing material and said dry fabric at the curing temperature of said sealing material to cause initial hardening of said sealing material and to dry said dry fabric and to seal said honeycomb core;

impregnating said dry fabric with a thermosetting resin; and

hardening the resin impregnated into said dry fabric by hot-pressing an entire assembly thus prepared under specific conditions [.],

said sealing material having in addition to said adhesive property a sufficient sealing effect to prevent the resin from flowing into the honeycomb core during said impregnating step.

2. (first amendment) A method of forming a honeycomb sandwich composite panel comprising the steps of:

stacking a dry fabric on both sides of a honeycomb core with a thermosetting sealing material having an adhesive property placed in between;

hardening said sealing material by heating said sealing material and said dry fabric to the curing temperature of said sealing material and maintaining this temperature for a specified period of time;

impregnating said dry fabric with a thermosetting resin while varying the temperature of said sealing material and said dry fabric to a resin impregnating temperature and maintaining this temperature for a specified period of time; and

hardening the resin impregnated into said dry fabric by heating said sealing material and said dry fabric to the curing temperature of said thermosetting resin and hot-pressing them for a specified period of time,

said sealing material having in addition to said adhesive property a sufficient sealing effect to prevent said thermosetting resin from flowing into said honeycomb during said impregnating step.

3. (first amendment) The method of forming the honeycomb sandwich composite panel as defined in claim 1 [or 2], wherein said sealing material is a laminated film formed by laminating

a plurality of thermosetting resin films in which glass [microbaloons] microspheres are mixed to adjust viscosity of said thermosetting resin films.

4. (first amendment) The method of forming the honeycomb sandwich composite panel as defined in claim 1 [or 2], wherein said sealing material is a laminated film formed of at least two thermosetting resin adhesive films and a carrier material placed between [the] said thermosetting resin adhesive films to be used as an adhesive film of said thermosetting resin adhesive films.

5. (first amendment) The method of forming the honeycomb sandwich composite panel as defined in claim 1 [or 2], wherein said sealing material is a laminated film formed of at least two thermosetting resin adhesive films and a thermosetting resin film placed between the thermosetting resin adhesive films, with glass [microbaloons] microspheres mixed in [the] said thermosetting resin film.

6. (first amendment) The method of forming the honeycomb sandwich composite panel as defined in claim 1 [or 2], wherein said sealing material is a laminated film formed by laminating a plurality of thermosetting resin adhesive films.

Clean Version of Claims

1. (first amendment) A method of forming a honeycomb sandwich composite panel comprising the steps of:

stacking a dry fabric on both sides of a honeycomb core with a thermosetting sealing material having an adhesive property placed in between;

heating said sealing material and said dry fabric at the curing temperature of said sealing material to cause initial hardening of said sealing material and to dry said dry fabric and to seal said honeycomb core;

impregnating said dry fabric with a thermosetting resin; and

hardening the resin impregnated into said dry fabric by hot-pressing an entire assembly thus prepared under specific conditions ,

said sealing material having in addition to said adhesive property a sufficient sealing effect to prevent the resin from flowing into the honeycomb core during said impregnating step.

2. (first amendment) A method of forming a honeycomb sandwich composite panel comprising the steps of:

stacking a dry fabric on both sides of a honeycomb core with a thermosetting sealing material having an adhesive property placed in between;

hardening said sealing material by heating said sealing material and said dry fabric to the curing temperature of said sealing material and maintaining this temperature for a specified period of time;

impregnating said dry fabric with a thermosetting resin while varying the temperature of said sealing material and said dry fabric to a resin impregnating temperature and maintaining this temperature for a specified period of time; and

hardening the resin impregnated into said dry fabric by heating said sealing material and said dry fabric to the curing temperature of said thermosetting resin and hot-pressing them for a specified period of time,

said sealing material having in addition to said adhesive property a sufficient sealing effect to prevent said thermosetting resin from flowing into said honeycomb during said impregnating step.

3. (first amendment) The method of forming the honeycomb sandwich composite panel as defined in claim 1, wherein said sealing material is a laminated film formed by laminating a

plurality of thermosetting resin films in which glass microspheres are mixed to adjust viscosity of said thermosetting resin films.

4. (first amendment) The method of forming the honeycomb sandwich composite panel as defined in claim 1, wherein said sealing material is a laminated film formed of at least two thermosetting resin adhesive films and a carrier material placed between said thermosetting resin adhesive films to be used as an adhesive film of said thermosetting resin adhesive films.

5. (first amendment) The method of forming the honeycomb sandwich composite panel as defined in claim 1, wherein said sealing material is a laminated film formed of at least two thermosetting resin adhesive films and a thermosetting resin film placed between the thermosetting resin adhesive films, with glass microspheres mixed in said thermosetting resin film.

6. (first amendment) The method of forming the honeycomb sandwich composite panel as defined in claim 1, wherein said sealing material is a laminated film formed by laminating a plurality of thermosetting resin adhesive films.

NEW CLAIMS

10. (new) The method of forming the honeycomb sandwich composite panel as defined in claim 2, wherein said sealing material is a laminated film formed by laminating a plurality of thermosetting resin films in which glass microspheres are mixed to adjust viscosity of said thermosetting resin films.

11. (new) The method of forming the honeycomb sandwich composite panel as defined in claim 2, wherein said sealing material is a laminated film formed of at least two thermosetting resin adhesive films and a carrier material placed between said thermosetting resin adhesive films to be used as an adhesive film of said thermosetting resin adhesive films.

12. (new) The method of forming the honeycomb sandwich composite panel as defined in claim 2, wherein said sealing material is a laminated film formed of at least two thermosetting resin adhesive films and a thermosetting resin film placed between the thermosetting resin adhesive films, with glass microspheres mixed in said thermosetting resin film.

13. (new) The method of forming the honeycomb sandwich composite panel as defined in claim 2, wherein said sealing material is a laminated film formed by laminating a plurality of thermosetting resin adhesive films.

14. (new) The method of forming the honeycomb sandwich composite panel as defined in claim 1, wherein said sealing material is a laminated film formed by laminating a plurality of thermosetting resin films in which short fibers or non-woven fabric of glasses is mixed to adjust viscosity of said thermosetting resin films.

15. (new) The method of forming the honeycomb sandwich composite panel as defined in claim 2, wherein said sealing material is a laminated film formed by laminating a plurality of thermosetting resin films in which short fibers or non-woven fabric of glasses is mixed to adjust viscosity of said thermosetting resin films.